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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:)
 Francesco Natalini et al.)
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 Serial No.: 09/761,950)
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 Filed: January 17, 2001)
)
 For: SYSTEM FOR MONITORING)
 AND SERVICING APPLI-)
 ANCES)
)

Examiner: J. West

Art Unit: 2857

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Commissioner for Patents
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Sir:

PROPOSED CLAIM CHANGES

1. (currently amended) A system for servicing household appliances, the system including:
 - A. one or more monitoring subsystems associated with the one or more appliances, each monitoring subsystem
 - i. continuously monitoring the operations of a given appliance and retaining as functional data information relating to the functioning of the appliance,
 - ii. analyzing the functional data and related historical and statistical data maintained by the monitoring subsystem and determining if

PATENTS
108041-0012

the appliance is in need of attention to avoid a failure of the appliance, and

- iii. transmitting a message indicating that the appliance requires attention and related functional data, ^{and} ~~and~~ ^{HISTORICAL, & STATISTICAL}

B. a center for receiving the messages sent by the monitoring subsystems, the center analyzing the message and the received data and related functional, historical and statistical data maintained by the service center and contacting one or more users of the associated appliances to inform them of the particular attention required by the appliances to avoid failures of the respective appliances and, as necessary, contacting appliance service people to arrange service for the household appliances.

2. (original) The system of claim 1 wherein each monitoring subsystem

- a. determines if the associated appliance requires immediate attention,
- b. produces alarm messages when immediate attention is required, and
- c. produces warning messages when other than immediate attention is required.

3. (previously presented) The system of claim 1 wherein

- a. the monitoring subsystem sends additional functional data or aggregations of the data to the center; and
- b. the center processes the data to determine if one or more of the appliances requires service in addition to the attention required to avoid failure.

4. (currently amended) The system of claim 3 wherein the center

determines, if service is required, whether the user of the one or more appliances has a service contract that covers the particular service, and arranges service of the respective appliances in accordance with the provisions of the contract, if the user has a service contract.

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PATENTS
108041-0012

5. (previously presented) The system of claim 4 wherein the center further
determines, if the service required is preventive maintenance, whether
the maintenance is of the type performed by the user or by an appli-
ance service person,
arranges, if the maintenance is to be performed by a service person and
the user has a maintenance contract for the appliance,
maintenance to be performed in accordance with the provisions of the
contract, and
notifies the user what preventive maintenance is to be done if the
maintenance is to be performed by the user.
6. (original) The system of claim 2 further including
- C. a network over which the monitoring subsystems transmit the mes-
sages;
 - D. a gateway connected to the network to receive the messages, the gate-
way
 - a. transmitting alarm messages to the center as soon as the mes-
sages are received, and
 - b. retaining warning messages and transmitting the retained mes-
sages at predetermined times or when other transmissions are
made to the center.
7. (previously presented) The system of claim 6 wherein
each monitoring subsystem aggregates the functional data over time into
statistical data that relates to the operations of the associated appliance,
the gateway polls each monitoring subsystem to request the statistical
data,
the gateway transmits the statistical data to the center at predetermined
times or when other transmissions are made to the center, and

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PATENTS
108041-0012

the center includes the statistical data in an analysis of the patterns of use and the operations of the appliances.

8. (previously presented) The system of claim 7 wherein the center determines if a given appliance should be replaced based on the associated patterns of use, recommends at appropriate times the replacement of the appliance with one or more appliance models that fit the associated pattern of use, determines if the user of the given appliance has a replacement contract, and if so, arranges for the delivery and installation of the replacement appliance model selected by the user.
9. (original) The system of claim 1 wherein one or more of the monitoring subsystems are adapters that monitor and analyze the energy consumption of the associated appliances.
10. (original) The system of claim 1 wherein one or more of the monitoring subsystems monitor the settings of the associated appliances, and the states of various components of the appliances.
11. (original) The system of claim 10 wherein the monitoring subsystems aggregate the functional data into historical data, and use the historical data in the analysis of the operations of the appliances.
12. (currently amended) A method for servicing household appliances, the method including the steps of:
- A. continuously monitoring the operations of one or more appliances and retaining as functional data information relating to the functioning of the respective appliances; *AT AN APPLIANCE MONITORING DEVICE*

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PATENTS
108041-0012

- B. analyzing the functional data and related historical and statistical data maintained by the respective appliance monitoring device at the appliances and determining if the respective appliances are in need of attention to avoid failures;
- C. transmitting to a remote center one or more messages indicating that respective appliances require attention and related functional data; ^{historical & statistical} and
- D. at ~~from~~ the center analyzing the messages and the related functional data and related functional, historical and statistical data maintained by the center contacting the users of the associated appliances to inform them that the respective associated appliances require attention to avoid failure.

13. (previously presented) The method of claim 12 further including the steps of
transmitting data from the appliances to the center,
analyzing at the center the data from all of the appliances in the household
to determine if one or more appliances requires service in addition to the attention required to avoid failure.

14. (previously presented) The method of claim 13 wherein
the step of analyzing at the appliance further includes determining if a
given appliance requires immediate attention, and
the step of transmitting one or more messages further includes producing
alarm messages when immediate attention is required and producing
warning messages when other than immediate attention is required.

15. (previously presented) The method of claim 14 wherein the step of contacting includes
determining, if service is required, whether the user of the appliance has a
service contract for the appliance, and

PATENTS
108041-0012

arranging service in accordance with the provisions of the contract, if the user has a service contract.

16. (previously presented) The method of claim 15 wherein the step of contacting further includes

determining, if preventive maintenance is required, whether the maintenance is performed by the user or an appliance service person,
determining, if the maintenance is to be performed by a service person, whether the user has a maintenance contract for the appliance,
arranging the maintenance to be performed in accordance with the provisions of the contract, and
notifying the user what preventive maintenance is to be done if the maintenance is to be performed by the user.

17. (previously presented) The method of claim 13 wherein the steps of transmitting include

transmitting the messages and data over a network to a gateway,
transmitting alarm messages and associated data from the gateway to the center as soon as the messages are received by the gateway, and
retaining warning messages and data at the gateway and transmitting the retained messages at predetermined times or when other transmissions are made to the center.

18. (previously presented) The method of claim 17 wherein

the step of analyzing further includes aggregating the functional data over time into statistical data that relates to the operations of the associated appliance,
the steps of transmitting further include polling from the gateway to request the statistical data and other data and transmitting the requested data

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PATENTS
108041-0012

to the center at predetermined times or when other transmissions are made to the center, and
the method further includes the step of including the statistical data in an analysis of the patterns of use and the operations of the appliances.

19. (previously presented) The method of claim 18 wherein the method further includes the steps of

determining if a given appliance should be replaced based on the analysis of patterns of use,
recommending replacement appliance models that fit the associated pattern of use,
determining if the user of the given appliance has a replacement contract, and if so, arranging for the delivery and installation of the replacement appliance model selected by the user.

20. (original) The method of claim 12 wherein the step of monitoring includes monitoring the energy consumption of one or more of the appliances.

21. (original) The method of claim 20 wherein the step of monitoring includes monitoring the user-controlled settings of the associated appliances, the ambient environment and the states of various components of the appliances.

22. (original) The method of claim 21 wherein the step of analyzing includes aggregating the functional data into historical data, and using the historical data in the analysis of the operations of the appliances.

23. (previously presented) The method of claim 22 further including the steps of
transmitting the functional data to the remote center;
analyzing the data at the remote center to determine if the one or more appliances are in need of attention.

PATENTS
108041-0012

24. (currently amended) A system for servicing household appliances, the system including:

- A. one or more monitoring subsystems associated with the one or more appliances, each monitoring subsystem
 - i. continuously monitoring the operations of a given appliance and retaining as functional data information relating to the functioning of the appliance,
 - ii. analyzing the functional data and related historical and statistical data maintained by the monitoring subsystem and determining if the appliance is in need of attention to avoid a failure, and
 - iii. transmitting a message indicating that the appliance requires attention ~~and the associated functional data~~ ^{→ HOUSEHOLD SYSTEM}
 - iv. periodically transmitting the functional data,
- B. a center for receiving the messages and the data sent by the monitoring subsystems, the center analyzing the messages and the data and related functional, historical and statistical data maintained by the center and contacting the users of the associated appliances to inform them of the attention required by the respective appliances to avoid failures.

25. (previously presented) The system of claim 24 wherein the center analyses the data from all of the appliances in the same household to determine changes in operating environment and uses the results in an analysis of the operations of the various appliance in the same household to determine if attention is required.

26. (previously presented) The system of claim 24 wherein the center analyses the data from a given type of appliance in the various households that report to the center and uses

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PATENTS
108041-0012

the results in an analysis of the operations of that type of appliance in each of the households to determine if attention is required.

27. (currently amended) A system for servicing household appliances, the system including:

- A. one or more monitoring subsystems associated with the one or more appliances, each monitoring subsystem
- monitoring the operations of a given appliance and retaining as functional data information relating to the functioning of the appliance,
 - analyzing the functional data and related historical and statistical data maintained by the monitoring subsystem and determining if the appliance is in need of attention to avoid a failure of the appliance,
 - setting one or more alarms when user attention is required by the appliance, and
 - transmitting a message indicating that the appliance requires attention and the related functional data if the user does not attend to the appliance within a predetermined time of setting the one or more alarms, and

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- B. a center for receiving the messages and data sent by the monitoring subsystems, the center analyzing the data and the messages and related functional, historical and statistical data and contacting the users of the associated appliances to inform them of the particular attention required by the given appliance to avoid the failure.

28. (previously presented) The system of claim 27 wherein the center

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PATENTS
108041-0012

further analyzes data from the appliances in a given household to determine if the appliance in need of attention requires additional service and if the other appliances require service, and

notifies the user of the additional service required by the given and other appliances.

29. (previously presented) The system of claim 28 wherein the center

further analyzes the data from various appliances in a given household to determine environmental conditions in which the appliances are operating, and

uses the environmental condition information in the analysis of the data from the appliances to determine which, if any, of the appliances requires service to avoid a failure.

30. (previously presented) The system of claim 28 wherein the center further analyses the data from a given appliance in accordance with operating data from other appliances of the same type to determine if the given appliance requires service to avoid a failure.

31. (previously presented) The system of claim 28 wherein the monitoring subsystem, the center or both further analyses the operating data from a given appliance in accordance with historical operating data for the same appliance to determine if the given appliance requires service to avoid a failure.

32. (previously presented) The system of claim 28 wherein the center

determines if the household has a service contract, and

if so, arranges service for the appliances in accordance with the terms of the service contract.

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PATENTS
108041-0012

33. (previously presented) The system of claim 27 wherein the center
further analyses the operating data to determine if the given appliance is being
used efficiently, and
as indicated, notifies the user the given appliance is not being used efficiently.

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